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Occultation of the Planet Mars observed at Islington.

By Warren De La Rue, Esq.*

"March 12th, 1854, observed the occultation of *Mars* by the moon with my 13-inch reflector, and with a power of 150.

	h	m	s	
The first contact took place at	14	33	19·5	Sidereal Time.
Complete eclipse	14	34	20	

"On the instant of contact the dark limb of the moon became distinctly visible. The eclipse of the planet was gradual, and afforded no indication of inflexion of light: the event was observed until it could have occupied only a very small fraction of a second of arc in breadth, as the atmosphere was beautifully steady at the time. The epoch of emersion was lost."

Extract of a Letter from J. Hippisley, Esq., to the Editor.

"Subsequently to the date at which I wrote to you, being at Mr. Dawes', in company with Mr. Lassell, we observed *Saturn*, not, however, under more than very *moderately good* atmospheric condition. *I saw* nothing to alter my impression of the configuration or position of the shadow; but MM. Lassell and Dawes both *thought* it did touch the outer ring, giving, however, respectively, considerably different estimates of the amount.

"Inclined to distrust my own sight when it did not agree with two observers of such eminence, I was much inclined to write to you to modify the terms of my memorandum, but a *repeated* view of the appearance again at my own observatory so entirely confirmed me, that I determined to let the memorandum stand, as it *was*, right or wrong, undoubtedly what *I did* see. However, I set about computing the positions of the shadow geometrically, regard being had to the relative positions of sun and earth to the plane of the ring; and I found, assisted by a *solid model*, which carefully represented the measurements of the planet, and was fixed on the polar axis of my telescope, so as to give it with tolerable accuracy, the necessary inclination to the sunshine, that the shadow would (on the supposition that the rings *were in one plane*) reach *half way across the outer ring;* but that this part of the shadow would be so nearly *occulted* by the ball to an observer on the earth, that the minute portion which would remain would probably be insufficient to be visible under any conditions of atmosphere to be ever hoped for.

"I made due allowance in the model for the difference of polar and equatoreal diameters of the planet, which is material, as the consequence is a configuration of the curves of the *shadow*, and of

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* Mr. De La Rue estimates his observatory to be 20^s west of Greenwich.

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1854MNRAS..14..186D

the *occultation*, favourable to the invisibility of the shadow at the epoch (February 12, 1854). I inclose a sketch of these curves to explain the position of the minute portion of shadow, not included within the curve of occultation. If this drawing be held edgeways, as the rings are now seen, a simple inspection will show that, when foreshortened, that portion becomes scarcely perceptible even ***with the paper in one's hands***, instead of an object under high power in the telescope; and if the plane of the outer ring be in the least raised above the inner and the equator of the planet, it would disappear altogether *geometrically* as well as *optically*.

"I may just add that, since his return to Liverpool, Mr. Lassell has written to me; and in his letter observes that ***he believes*** he sees the outer ring, as I describe, free from shadow, though not with sufficient certainty to speak with entire confidence."

"*Ston Easton, April 6*, 1854."

Account of a Portable Observatory erected by Thomas Dell, Esq.[*]

"The model of my small *portable* observatory requires but very few words of explanation, and it is only in the hope that a short account of it may be of use to persons who have but small means and space at their disposal that I venture to offer it.

"The erection consists of two apartments, with a door between them. The one contains the transit instrument, which, for the purpose of economising space, is placed very much on one side; and the other the equatoreal and clock. The dimensions of the transit-room, 7 feet 6 inches in length by 5 feet 6 inches in width, and 6 feet 6 inches in height. The equatoreal-room is 10 feet in diameter, the walls being 7 feet 3 inches high, surrounded by a conical roof, which revolves on rollers let into the oak curbing, to which the walls are attached, and being very light is easily turned with one hand. The piers which carry the polar axis are of well-seasoned oak, 1 foot square, above the ground, and set in concrete to a depth of 6 feet beneath it. These I find quite steady enough, (they being, of course, perfectly independent of the floor and wall) for the telescope they carry, it having a focal length of 6 feet and 4¾ inches aperture. The polar axis consists of two pieces of oak, about 7 feet long, morticed at the top and bottom to two cross pieces, to which the metal pins, on which the whole turns, are attached, and after being put together, were accurately turned in a lathe.

"The telescope moves on an axis in the manner of a transit instrument in the centre of the axis, and thus no counterpoise is required. The whole of the building, with the exception of the curbing, which is oak, is of deal, half an inch thick; the frame-

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[*] A model of this observatory was exhibited at the last meeting of the Society.

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